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# Controlling Biodiversity? Ethical analysis of the case of swine fever and wild boar in Denmark<sup>1</sup>

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## Abstract

Biodiversity has high priority these days – not many would argue against a concern for it. However, the implications of the priority depend on the level of nature we are addressing. Big mammals are absent from Danish nature. They have been here before, so why not reintroduce them or allow for natural migration to promote biodiversity and wildness? But a “richer” nature is not the only value at stake. Denmark is also the world’s largest exporter of pork. Wild boars could act as a vector for classical swine fever (CSF) infections in conventionally farmed pigs. This looks like a classic conflict between considerable economic interests and profound conservation concerns. To get to a full understanding of the issues, and to open a more comprehensive discussion, we need to address the embedded ethical issues. What degree of control are we ready to exert, and how do we really value nature? The paper argues that besides the distinction and potential conflict between nature as a value and the common good, there is also an interesting distinction to be made between “micro-nature” (including the virus that cause classical swine fever) and “macro-nature” (medium sized flora and fauna). Predominantly, micro-nature is something we want to control, whereas we want macro-nature to be let loose. This dichotomy of nature has to be addressed.

**Keywords:** Agriculture, biodiversity, food export, risk assessment, values

## Introduction

Should wild boars be reintroduced to Denmark to promote biodiversity? Years of selective breeding have more or less transformed the wild pig into a “bacon and tinned food pig” (Clausen, 1968). According to Danish Agriculture, the organisation which handles farmers’ interests, Danish society is based on production systems in agriculture utilising the majority of the land, and if there are going to be additional wild animals in Denmark they should be fenced off (Andersen, 1996). Classic swine fever (CSF) is of

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increasing concern in Europe, and wild boars are potential transmitters of the virus to domestic pigs (Artois *et al.*, 2002). The OIE (Office International des Epizooties) lists CSF as a highly contagious List A disease. In 1997 more than 11 million pigs had to be destroyed in the Netherlands as a result of CSF. It was estimated that this represented a net economic loss of 2 billion euros (Meuwissen *et al.*, 1999). Between 1991 and 2001, other countries in Europe also resorted to large-scale culling following CSF infection, making the disease one of the most feared in domestic animals (Laddomada, 2000). Denmark is largest exporter of pork in the world. Danish exports of pork have a current value of 3.5 billion euros. Free-ranging wild boars are perceived by some agricultural observers as a ticking bomb under this sector of global importance. However, being a leading food exporter has a price.

Explicit attention to biodiversity is relatively recent. Human activity has, in the past, caused many species of animal and plant to become locally, and in some cases globally, extinct. Over-utilisation and loss of suitable habitat drove the beaver away from Denmark 2000 years ago. The wild boar, an important game animal, nearly became extinct in the seventeenth century; by the nineteenth century it had gone. Danish numbers of many other species of wildlife which were seen either as having no use, or as pests (e.g. birds of prey and fish-eating cormorants), or as threatening to humans (e.g. the wolf), were deliberately reduced in the nineteenth and early twentieth centuries (Olsen, 1997; Alex-Hansen, 1946). Similar developments took place throughout Europe.

Now things have changed. There is a pronounced “back to nature” trend. Our view of the natural world has changed from being one in which nature is viewed predominantly as a resource in a narrow sense (i.e. something to be moulded and tamed to our wishes), to one in which nature protection and biodiversity preservation are central (Gamborg & Sandøe, 2004). Legislation protecting species and habitats has of course been passed. More recently, however, there have been moves towards comprehensive ecological restoration, including species reintroduction (Goulding *et al.*, 2003; Leaper *et al.*, 1999; Nolet & Rosell, 1998).

In Denmark nature protection organisations have suggested that free-ranging wild boars should be reintroduced as part of a national biodiversity strategy. In any case, animals from neighbouring Germany, where wild boars are becoming abundant in some places as a consequence of a series of mild winters and the increasing cultivation of maize, are likely to migrate to Denmark in increasing numbers.

Other things being equal, most people would presumably welcome “richer” nature – with a higher abundance of plant and animal species and more variety of structure. However, not everybody shares the view that the return of extinct species is in fact something to be promoted. Other things are not equal: with boars, for example, somebody has to provide land, and somebody will have to pay the costs of any damage the boars cause, and in particular costs imposed by diseases such as classical swine fever. To open up a comprehensive discussion we need to ask: What degree of control are we ready to exert and how do we really value nature?

## The wild boar in Denmark

At present free-ranging wild boars are not actively encouraged in Denmark. Boars are generally kept in fenced off populations in parks – where, time and again, some animals escape. But in 1995 Danish

agriculturalists became aware of a population of 23 free-ranging wild boars originating from fenced populations in the southern part of Denmark, close to the German border. The question arose: Should this population be allowed to stay where it was, or should it be culled or moved back into captivity to avoid any risk of infection to domestic pigs?

From a biological point of view, it was argued that big mammals were lacking in the forests. A new national forest strategy stressed the need for re-establishing natural fauna to promote a more dynamic forest ecosystem. From a moral point of view, nature conservationists argued that the wild boar was part of authentic Danish nature, and that it ought to part of the more versatile flora and fauna, not only in response to Danish demands but also to send a signal that Denmark is serious about the Convention on Biodiversity. The latter was felt to be especially important, given that we expect poor developing countries to preserve animals such as elephants. However, from an economic point of view, Danish agriculture and the pig industry strongly objected to free-ranging wild boar, seeing the animal as a serious pest which could cause considerable economic losses to farmers.

At the end of 1995, the Minister of Environment decided to order all free-ranging wild boars in Denmark to be shot, apparently after substantial pressure from the Danish pig industry; the minister publicly expressed his regret. However, the decision caused a media furore, and two months later it was reversed. Near the end of 1996, however, a new decision was taken: cull the wild boars with all means possible (Steinar, 1997); and all the boars were shot. Tests later revealed that none were carriers of transmittable diseases. Danish agriculture expressed its willingness to pay shooting prices of approximately 250 euros per wild boar. Since then, there have been no reported sightings of free-ranging wild boars in Denmark.

In 2005 a comprehensive risk analysis of free-ranging wild boar was concluded (Alban *et al.*, 2005). Its remit was to assess the risk of CSF entering Denmark (where the last incident was in 1933) as a result of free-ranging wild boar, and to compare this with existing risks. According to the assessment, the risk of CSF entering the domestic pig herd may increase a little if free-ranging wild boars are reintroduced to Denmark. As long as there is no swine fever north of the Kieler canal, the probability of transmission of the disease by migrating wild boar is insignificant. Another mode of transmission of CSF is through the deposition of tourists' meat waste in the southern part of Denmark where – if there was a free-ranging population of wild boar – wild boar would eat the infected meat. According to the risk analysis, however, the most likely way that CSF would be transmitted to domestic pigs, if it were, would be through animal transport, the import of breeding animals or semen, illegal imports of meat, and hunters going hunting abroad (Alban *et al.*, 2005). That is, the primary risks did not involve wild boar.

## Controlling biodiversity – ethical issues at stake

The Danish boar case can be seen as a classic conflict between nature conservation and economic interests – between the value of nature and the value of production. But there is more at stake, and recognition of this may change the way we look at these kinds of conflict. Society has now acquired a broader view of the value of nature, which is of a broader non-use kind. So no-one denies the value of wild nature. We often tend, of course, to attach different weights to different values; and here it seems that the weightings in question are still influenced by one's place and or role in society (e.g. urban dwellers versus farmers).

Certainly, ambivalence still exists. Most would agree that some parts or aspects of nature – such as swine fever – must still be combated with all means possible, whereas other parts attract our concern and are protected. In the case of the wild boar, we need to distinguish two types or levels of nature: “micro-nature” and “macro-nature”. There are differences in the ways in which, and just how energetically, we generally want to control these types of nature.

Micro-nature refers to organisms and processes which are not visible to the naked eye. It includes the virus that causes CSF. Traditionally, we examine this type of nature through comprehensive risk assessments, i.e. we evaluate hazards, their probability and the potential impact on other parts of nature, especially the bigger mammals. Consequently, management of micro-nature is essentially risk management. It involves identifying disease carriers, modes of transmission, and hence potential culling of such carriers and strict control of the immediate environment – and communicating the measures taken, entering into dialogue with stakeholders, and so on. No intrinsic value seems to be attached to nature at this level.

Macro-nature is “big” nature – medium-sized flora and fauna. It is the kind of nature which eight out of ten urban dwellers in Denmark want to visit and experience. In the present case, it is wild boar as a nature and landscape element which is the focal point. No-one denies that more biodiversity here is of positive value. Assessing this type of nature is more a question of examining the impact of other (e.g. human) actions on flora and fauna through biological studies, socio-economic surveys of attitudes and preferences and practical considerations. Management, including damage control, focuses on catching, culling and fencing off areas.

Clearly, there is a schism here. From the lay perspective, most of us expect a high degree of control to be exerted over micro-nature. We demand that potential damages and diseases be managed. On the other hand, many want macro-nature to run wild, creating a greater variety of species which live in a more dynamic nature. From the scientific and managerial environment, then, there seems to be a much more risk-averse attitude to micro-nature than to macro-nature. In the latter case, we seem to be more willing to accept that we don’t really know how things are going to develop.

The problem is that the connection between these two types of nature is often not noticed. Micro-nature is discussed within specific academic disciplines, such as aetiology and epidemiology. By contrast, discussion about macro-nature takes place in ecology, geography, landscape management, and so on. *Common* discussion of nature and its management is conspicuous by its absence. But if we acknowledge that micro-nature and macro-nature are connected, we will become better at making decisions over where to draw the line in controlling nature, better at making choices about the control of biodiversity and management in general, and better equipped to enter fruitful discussions.

## Conclusion

The current debate about wild boar and CSF is conceptualised primarily as a traditional conflict between economic interests and nature conservation. But there is another layer in the debate. We need to ask how, in reality, do we look upon nature, and to what degree do we want to control it? On the whole, micro-nature is something we seek to control and macro-nature is something we are happy to let loose. This dichotomy needs to be more prominent, and more scrutinised, in discussion. To address it, and the ethical

issues it raises, we will need to listen to stakeholders in both the micro-nature and macro-nature arenas. The first aim should be to ensure that the two kinds of nature are no longer seen as totally separate from each other; after that the precise nature of their relationship can be examined more closely.

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